

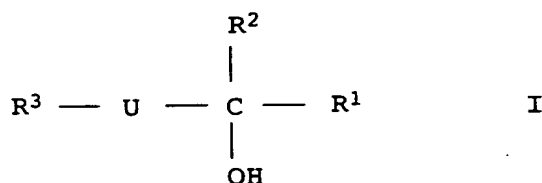
Preparation of α -oxidized carbonyl compounds

Abstract

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A process for the preparation of a compound of the general formula I

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where R^1 , R^2 , R^3 are hydrogen, C_1 - to C_{20} -alkyl, C_2 - to C_{20} -alkenyl, C_2 - to C_{20} -alkynyl, C_3 - to C_{12} -cycloalkyl, C_4 - to C_{20} -cycloalkyl-alkyl, C_1 - to C_{20} -hydroxyalkyl, or aryl or C_7 - to C_{20} -arylalkyl which is unsubstituted or substituted by C_1 - to C_8 -alkyl, C_1 - to C_8 -alkoxy, halogen, C_1 - to C_4 -haloalkyl, C_1 - to C_4 -haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl, C_2 - to C_8 -alkoxycarbonyl or cyano, or R^1 and R^2 or R^3 together are a C_2 - to C_9 -alkandiyl unit which is unsubstituted, monosubstituted or disubstituted by C_1 - to C_8 -alkyl, C_1 - to C_8 -alkoxy and/or

25 halogen and in which one or two methyl groups may also be replaced by a $(\text{CH}=\text{CH})$ unit and R^3 is additionally an acetylated carbonyl group in which the alkoxy groups are derived from an alcohol of the general formula II

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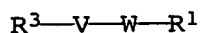


- II

where R^4 is C_1 - to C_6 -alkyl, and

U is an acetylated carbonyl group in which the alkoxy groups are

35 derived from an alcohol of the general formula II, or is a compound of the general formula III



III

40 where R^1 is as defined under the formula I, and R^3 is exclusively aryl which is unsubstituted or substituted by C_1 - to C_8 -alkyl, C_1 - to C_8 -alkoxy, halogen, C_1 - to C_4 -haloalkyl, C_1 - to C_4 -haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl, C_2 - to C_8 -alkoxycarbonyl or cyano,

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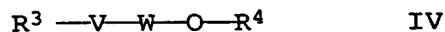
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V is a carbonyl group or is as defined for U under the formula I, and

W is as defined for V, with the proviso that one of the groups V and W is a carbonyl group and the other is an acetylated carbonyl group,

or

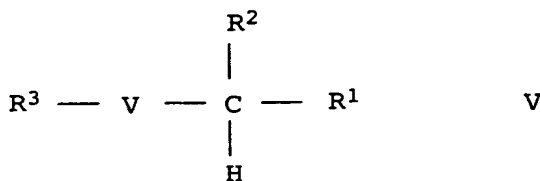
10 a compound of the general formula IV



where R^4 is as defined under the formula II, V and W are as defined under the formula II, and R^3 is as defined under the formula III,

by subjecting a compound of the general formula V

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where V, R^1 , R^2 and R^3 are as defined under the formula I or III, with the proviso that

30 - in the case where a compound of the formula III is desired, use is only made of a compound Va in which

R^1 is exclusively hydrogen and

35 R^3 is exclusively aryl which is unsubstituted or substituted by C_1 - to C_8 -alkyl, C_1 - to C_8 -alkoxy, halogen, C_1 - to C_4 -haloalkyl, C_1 - to C_4 -haloalkoxy, phenyl, phenoxy, halophenyl, halophenoxy, carboxyl, C_2 - to C_8 -alkoxycarbonyl or cyano, and

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- in the case where a compound of the formula IV is desired, use is only made of a compound Vb in which

R^1 and R^2 are exclusively hydrogen,

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R³ is exclusively aryl which is unsubstituted or substituted
by C₁- to C₈-alkyl, C₁- to C₈-alkoxy, halogen, C₁- to
C₄-haloalkyl, C₁- to C₄-haloalkoxy, phenyl, phenoxy,
halophenyl, halophenoxy, carboxyl, C₂- to
5 C₈-alkoxycarbonyl or cyano,

to an electrochemical reaction with an alcohol of the general
formula II in the presence of an auxiliary electrolyte and
catalytic amounts of a metal salt (S) derived from a metal from
10 the 1st, 2nd, 6th or 8th sub-group or from lead, tin or rhenium.

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Abstract

A method for producing compounds which are oxidized in an alpha position by electrochemical reaction with alcohol in the presence of an auxiliary electrolyte and catalytic amounts of a metal salt.

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